

Cracking Codes, Solving Mysteries

An activity of "Tintin's Timeless Adventures".

Read the article "Tintin's timeless adventures (pages 22-23, *What's Up* March 2025). In the comics, Tintin often cracked secret codes to solve mysteries. Have a shot at it yourself!

1. Watch the following video to learn more about cryptography.

The Science of Codes: An Intro to Cryptography

➤ <https://youtu.be/-yFZGF8FHSg?si=GkBmcwg9LMvWlPho>

(SciShow, 7 August 2015)

Here are some of the ciphers mentioned in the video:

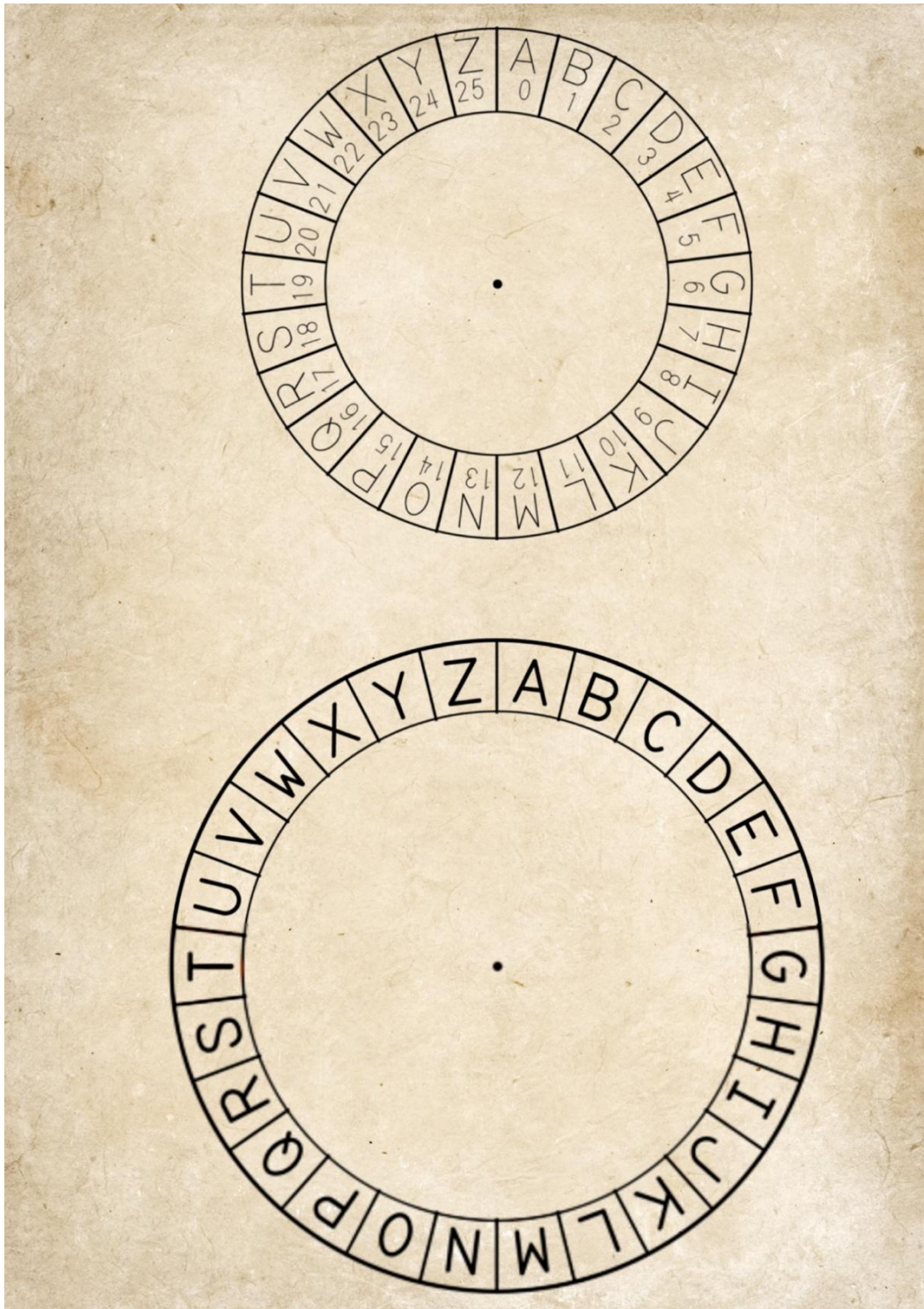
Cipher	What it is	How it works
Caesar cipher	Shifting the letters of the alphabet forward or backward by a fixed number of places.	(Key: +3 letters) Shift three letters up for each letter: "HELLO" will become "KHOOR"
Vigenère cipher	A more advanced version of the Caesar cipher. Instead of shifting letters by a fixed number of places, it uses a secret keyword to change the shifts for each letter.	(Key: SECRET is the keyword) Placing the keyword over the message, you will get: HELLO (message) SECRE (keyword) S(+18), E(+4), C(+2), R(+17), E(+4) "HELLO" will become "ZINCS"
Enigma machine	A cipher machine used by the Germans during World War 2. When a letter on its keyboard was pressed, the letter that came out was one that was scrambled by rotating wheels inside the machine.	If you pressed "A", the machine might show "X", and if you pressed "A" again, it might show "M" because the rotating wheels had moved.

2. The following is a message done using the Caesar cipher. Can you figure out what it says? (Cut out the circles on the next page to make a Caesar Cipher Wheel to help you!)



Clue: The key is "-3"

3. Make a Caesar Cipher Wheel. Cut out the wheels on the next page. Poke a hole where the dots are and attach the wheels together with a paper fastener. The smaller wheel goes on top of the larger one.



How to use the wheel: Rotate the inner wheel to set the shift number. (E.g +3 means A=D, B=E, etc). Match the inner letter with the corresponding outer letter to encode or decode the message.

4. Write your own secret message using the Caesar Cipher Wheel. Swap secret messages with another pair and try to decode each other's message!

Coded messages are useful when we want to keep information secret. They can also be used simply for fun!